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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,572	09/19/2005	Hiroyuki Kurimura	278481US0PCT	9551
22850 7590 10/02/2007 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MULLIS, JEFFREY C	
			ART UNIT	PAPER NUMBER
			1711	
			NOTIFICATION DATE	DELIVERY MODE
			10/02/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/549,572

Applicant(s)

KURIMURA ET AL.

Examiner

Jeffrey C. Mullis

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12-16-05; 4-10-06; 5-10-07
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 1711

Claims 4-13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 4-13 are multiple dependent claims dependent on other multiple dependent claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moczygemba et al. (US 5,705,569).

Patentees disclose a polymodal styrenic block copolymer composition in which 3 consecutive charges of initiator and styrene are used followed by a mixed charge of styrene/diene in specific amounts. Note Table 5 in this regard. While applicants various molecular weight ratios are not disclosed, those skilled in the art would deduce such ratios approximately based on the disclosure of Table 5 in that it is assumed in the art

Art Unit: 1711

that one mole of alkyl lithium initiator initiates one mole of polymer chains. Thus the top molecular weight resulting from a particular charge of alkyl lithium and monomer would be proportional to the amount of monomer and inversely proportional to the total amount of monomer added with the charge of alkyl lithium (or immediately after) and any charges of monomer added with subsequent charges of alkyl lithium (adjusted for the fact that some of the monomer will polymerize with the subsequent charge of alkyl lithium as well as with the polymeric species resulting from the first charge). A minimum ratio of $M1/M3$ for the ranges in Table 5 by for instance selecting an initiator level of 0.001, 0.002 and 0.002 for the first, second and third charges respectively and an amount of monomer for the first second and third charges of 48, 12 and 6 (such as falls within the disclosure of Table 5) calculates as 16 which assumes that none of the monomer added subsequent or with the second charge of alkyl lithium adds to the species resulting from the first alkyl lithium addition. Given that there would be 4 times as much active lithium present in the form of second and third charges of alkyl lithium, this assumption would more than reasonably appear to indicate $M1/M3$ less than 25 as required by the claims. Linear block copolymers would result from coupling with difunctional coupling agents such as are disclosed by the patent and as would be understood by those skilled in the art. With re to applicants polydispersities, polydispersities resulting from a single charge of alkyl lithium and a single charge of monomer are understood by those skilled in the art to be generally fairly narrow and applicants lower value of polydispersity of 3.25 is roughly double of what those skilled in the art would expect from a single charge of styrene and butyl lithium. However given

Art Unit: 1711

the multiple additions of alkyl lithium and monomer, those skilled in the art would assume substantial broadening of molecular weight distribution for the above proposed charge sequence such that molecular weight distribution would lie within the metes and bounds of the claims. While the examples of the patent do not reasonably appear to inherently produce styrene blocks with applicants M1/M3, for the reasons set out above those skilled in the art would assume that applicants characteristics would be inherently produced by choice of monomer and initiator amounts falling within the ranges of Table 5. Hence to arrive at applicants composition based on the patent disclosure would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moczygemba (US 5,393,838). Patentees disclose a polymodal block copolymer produced by use of 3 consecutive charges of styrene or styrene/butadiene mixture such as would produce 3 polymer blocks comprising vinyl aromatic monomer and containing some butadiene (not excluded by the claims). Note Table VI in column 12 where a value of M1/M3 of 15 can be calculated for the vinyl aromatic blocks produced through step 5 based on the assumption that the species resulting from the step 1 charge of butyl lithium incorporates all 35 phm of the first charge and half (15 phm) of the step 2 and step 3 charges (given that half of the active alkyl lithium present during steps 2 and 3 is from the step 1 charge of alkyl lithium) and assuming top molecular weight of an aromatic

Art Unit: 1711

block is proportional to the amount of monomer incorporated and inversely proportional to the amount of alkyl lithium from which the block is formed. While the material is coupled with VIKOFLEX 7170 which is an epoxidized soybean oil which has roughly 4 epoxy groups, coupling of lithium terminated styrenic block copolymers is notoriously inefficient and even a tiny amount of material in which only 2 chains are coupled read on the instant claims despite the limitation "linear". Furthermore soybean oil is a mixture of unsaturated materials and it appears likely that some diunsaturated material is present in soybean oil prior to epoxidation. With re to applicants polydispersities, polydispersities resulting from a single charge of alkyl lithium and a single charge of monomer are understood by those skilled in the art to be generally fairly narrow and applicants lower value of polydispersity of 3.25 is roughly double of what those skilled in the art would expect from a single charge of styrene and butyl lithium. However given the multiple additions of alkyl lithium and monomer, those skilled in the art would assume substantial broadening of molecular weight distribution for the above proposed charge sequence such that molecular weight distribution would lie within the metes and bounds of the claims.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis

Art Unit: 1711

exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 10/549,574. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the claims overlap.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis, 9-5pm, M-F at telephone number 571 272 1075.

Application/Control Number: 10/549,572
Art Unit: 1711

Page 7

Jeffrey C. Mullis
Primary Examiner
Art Unit 1711

JCM

9-20-07

Jeffrey Mullis
Primary Examiner
Art Unit 1711

A handwritten signature in black ink, appearing to be 'JCM', located below the printed name of Jeffrey C. Mullis.